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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/538,002 | 06/13/2006 | Roberto A Macina | DEX-0547 | 8194 |

32800 7590 01/14/2008

LICATA & TYRRELL P.C.
66 E. MAIN STREET
MARLTON, NJ 08053

| EXAMINER | |
|---|---|
| MARTINELL, JAMES | |
| **ART UNIT** | **PAPER NUMBER** |
| 1634 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 01/14/2008 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

poreilly@licataandtyrrell.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/538,002 | MACINA ET AL. | |
| | Examiner | Art Unit | |
| | James Martinell | 1634 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *11-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/3/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant's election with traverse of the requirement for restriction in the reply filed on November 5, 2007 is acknowledged. The traversal is on the ground(s) that "a search of the art relating to an elected nucleic acid sequence should reveal art relating to the protein encoded thereby and antibodies thereto". This is not found persuasive because the searches of the three Groups of inventions are not co-extensive. It is noted that applicants did not argue against the selection of a single sequence for examination on the merits.

The requirement is still deemed proper and is therefore made FINAL.

Claims 11-14, 15 (insofar as it is drawn to polypeptide assays) and 16-18 (insofar as they are drawn to kits containing polypeptides (claim 16), methods of treatment using polypeptides (claim 17), and polypeptide vaccines (claim 18)) are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 5, 2007.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP §608.01. Embedded hyperlink and/or other form of browser-executable code appear in at least the following locations:

(a) page 195, line 6.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are vague, indefinite, and incomplete.

(a) Claims 1 and 15-18 are vague and indefinite because they claim more than was elected. Claims 1, 15, 16, and 17 are drawn to or require the use of

more than one selected nucleic acid sequence. Claim 15 (parts (a) (v) and (vi) and part (b) comparing polypeptide amounts) is drawn to a non-elected invention. Claim 16 (part (e)) is drawn to kits containing polypeptides. Claim 17 (part (e)) is drawn to methods of using polypeptides. Part of claim 18 is drawn to polypeptide vaccines.

(b) The recitation of "selectively hybridizes" (claims 1, 15, 16, and 17) is vague, indefinite, and incomplete because nucleic acid molecular hybridization is a process in which selective hybridization is dependent upon competing target in the hybridization mixture (*e.g.*, see Kennell (Progr. Nucl. Acid Res. Mol. Biol. 11: 259 (1971)) cited here as of interest). Since the claims give no information about the presence or absence of competing targets, the claims are vague, indefinite, and incomplete. The metes and bounds of the claims are not clear.

(c) The recitation of "selectively hybridize" (claim 7) is vague, indefinite, and incomplete because nucleic acid molecular hybridization is a process in which selective hybridization is dependent upon competing target in the hybridization mixture (*e.g.*, see Kennell (Progr. Nucl. Acid Res. Mol. Biol. 11: 259 (1971)) cited here as of interest). Since the claim gives no information about the presence or absence of competing targets, the claim is vague, indefinite, and incomplete. The metes and bounds of the claim are not clear.

(d) Claims 16, 17, and 18 are incomplete because they depend from cancelled claim 12.

(e) Claims 7 and 10 are vague and indefinite because they are improper hybrid claims. Each of claims 7 and 10 is a method claim, while claim 1, from which each of claims 7 and 10 depends, is a composition claim.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 9, and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by either one of Stormann et al (U.S. Patent No. 6,077,675) or Drmanac et al (WO 01/75067 A2 (October 11, 2001)). Stormann et al discloses a nucleic acid that shares 3589 nucleotides with SEQ ID NO: 9 of the instant claims (see the alignment below). Thus, the nucleic acids of Stormann et al would hybridize to SEQ ID NO: 9 of the instant claims. Kennell (Progr. Nucl. Acid Res. Mol. Biol. 11: 259 (1971) paragraph bridging pages 260-261) teaches that a heteroduplex of 25-50 base pairs approaches maximal stability, thus, the nucleic acids of Stormann et al are embraced by the claims. In addition, Stormann et al teaches the use of vectors and host cells to produce a polypeptide encoded by the nucleic acid (*e.g.*, see column 11, line 20 through column 12, line 27).

Alignment of Stormann et al SEQ ID NO: 1 with SEQ ID NO: 9

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RESULT 1
US-08-823-110-2
; Sequence 2, Application US/08823110
; Patent No. 6077675
;  GENERAL INFORMATION:
;    APPLICANT:  Stormann, Thomas M.
;    APPLICANT:  Simin, Rachel T.
;    APPLICANT:  Hammerland, Lance G.
;    APPLICANT:  Fuller, Forrest H.
;    TITLE OF INVENTION:  NOVEL HUMAN METABOTROPIC
;    TITLE OF INVENTION:  GLUTAMATE RECEPTOR
;    NUMBER OF SEQUENCES:  16
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Lyon & Lyon
;      STREET:  633 West Fifth Street
;      STREET:  Suite 4700
;      CITY:  Los Angeles
;      STATE:  California
;      COUNTRY:  U.S.A.
;      ZIP:  90071-2066
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5" Diskette, 1.44 Mb
;      MEDIUM TYPE:  storage
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  IBM P.C. DOS 5.0
;      SOFTWARE:  FastSEQ for Windows 2.0
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;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/823,110
;      FILING DATE:  March 24, 1997
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/604,298
;      FILING DATE:  February 21, 1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Warburg, Richard J.
;      REGISTRATION NUMBER:  32,327
;      REFERENCE/DOCKET NUMBER:  224/259
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (213) 489-1600
;      TELEFAX:  (213) 955-0440
;      TELEX:  67-3510
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  3833 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-823-110-2

  Query Match             91.4%;  Score 3412.8;  DB 3;  Length 3833;
  Best Local Similarity   96.2%;  Pred. No. 0;
  Matches 3589;  Conservative    0;  Mismatches   12;  Indels  129;  Gaps    4;

Qy          1 GTGTGCTGGAAAGGCGTGCCCCCGCTGGGCTTCTTCACCGCGCCCTCTGCGGGGAGCAGG 60
              |||   ||||   ||| |||||||  ||||||| ||||||||||||||||||||||||||
Db        145 GTGACATGGAGCTGCGGGCCCCCGGCGGGCTTCCTCACCGCGCCCTCTGCGGGGAGCAGG 204

Qy         61 GAATAATTCTGCTACAAGGCTGATTTCAAGGACATGAATTGTTGACCTCATCCCAACATC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        205 GAATAATTCTGCTACAAGGCTGATTTCAAGGACATGAATTGTTGACCTCATCCCAACATC 264

Qy        121 AGAACCTCAGATGTTCTAATTTTTGCACCATTCCAGGCAAGTTGATCTTATAAGGAAATA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        265 AGAACCTCAGATGTTCTAATTTTTGCACCATTCCAGGCAAGTTGATCTTATAAGGAAATA 324

Qy        181 AAATTGAACCTTAGGGGTCTGATGGAAATTCACTGTGACATTCAAATCAAGAAAACTTGC 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        325 AAATTGAACCTTAGGGGTCTGATGGAAATTCACTGTGACATTCAAATCAAGAAAACTTGC 384

Qy        241 TAATGCCCACAGAGCCTTTTCCCCATGGGCCCTGATGGTAGCCTCCAGAAGGTGCAGCCT 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        385 TAATGCCCACAGAGCCTTTTCCCCATGGGCCCTGATGGTAGCCTCCAGAAGGTGCAGCCT 444

Qy        301 CAGGTGGTGCCCTTTCTGCTGTGTTGCAAGAATAAACTTTGGGTCTTGGATTGCAATACC 360
              |||||||||||||||| |||||  ||||||||||||||||||||||||||||||||||||
Db        445 CAGGTGGTGCCCTTTCTTCTGTG--GCAAGAATAAACTTTGGGTCTTGGATTGCAATACC 502

Qy        361 ACCTGTGGAGAAAATGGTATGCGAGGGAAAGCGATCAGCCTCTTGCCCTTGTTTCTTCCT 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        503 ACCTGTGGAGAAAATGGTATGCGAGGGAAAGCGATCAGCCTCTTGCCCTTGTTTCTTCCT 562

Qy        421 CTTGACCGCCAAGTTCTACTGGATCCTCACAATGATGCAAAGAACTCACAGCCAGGAGTA 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        563 CTTGACCGCCAAGTTCTACTGGATCCTCACAATGATGCAAAGAACTCACAGCCAGGAGTA 622

Qy        481 TGCCCATTCCATACGGGTGGATGGGGACATTATTTTGGGGGGTCTCTTCCCTGTCCACGC 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        623 TGCCCATTCCATACGGGTGGATGGGGACATTATTTTGGGGGGTCTCTTCCCTGTCCACGC 682

Qy        541 AAAGGGAGAGAGAGGGGTGCCTTGTGGGGAGCTGAAGAAGGAAAAGGGGATTCACAGACT 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        683 AAAGGGAGAGAGAGGGGTGCCTTGTGGGGAGCTGAAGAAGGAAAAGGGGATTCACAGACT 742
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Qy        601 GGAGGCCATGCTTTATGCAATTGACCAGATTAACAAGGACCCTGATCTCCTTTCCAACAT 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        743 GGAGGCCATGCTTTATGCAATTGACCAGATTAACAAGGACCCTGATCTCCTTTCCAACAT 802

Qy        661 CACTCTGGGTGTCCGCATCCTCGACACGTGCTCTAGGGACACCTATGCTTTGGAGCAGTC 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        803 CACTCTGGGTGTCCGCATCCTCGACACGTGCTCTAGGGACACCTATGCTTTGGAGCAGTC 862

Qy        721 TCTAACATTCGTGCAGGCATTAATAGAGAAAGATGCTTCGGATGTGAAGTGTGCTAATGG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        863 TCTAACATTCGTGCAGGCATTAATAGAGAAAGATGCTTCGGATGTGAAGTGTGCTAATGG 922


Qy        781 AGATCCACCCATTTTCACCAAGCCCGACAAGATTTCTGGCGTCATAGGTGCTGCAGCAAG 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        923 AGATCCACCCATTTTCACCAAGCCCGACAAGATTTCTGGCGTCATAGGTGCTGCAGCAAG 982

Qy        841 CTCCGTGTCCATCATGGTTGCTAACATTTTAAGACTTTTTAAGATACCTCAAATCAGCTA 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        983 CTCCGTGTCCATCATGGTTGCTAACATTTTAAGACTTTTTAAGATACCTCAAATCAGCTA 1042

Qy        901 TGCATCCACAGCCCCAGAGCTAAGTGATAACACCAGGTATGACTTTTTCTCTCGAGTGGT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1043 TGCATCCACAGCCCCAGAGCTAAGTGATAACACCAGGTATGACTTTTTCTCTCGAGTGGT 1102

Qy        961 TCCGCCTGACTCCTACCAAGCCCAAGCCATGGTGGACATCGTGACAGCACTGGGATGGAA 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1103 TCCGCCTGACTCCTACCAAGCCCAAGCCATGGTGGACATCGTGACAGCACTGGGATGGAA 1162

Qy       1021 TTATGTTTCGACACTGGCTTCTGAGGGGAACTATGGTGAGAGCGGTGTGGAGGCCTTCAC 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1163 TTATGTTTCGACACTGGCTTCTGAGGGGAACTATGGTGAGAGCGGTGTGGAGGCCTTCAC 1222

Qy       1081 CCAGATCTCGAGGGAGATTGGTGGTGTTTGCATTGCTCAGTCACAGAAAATCCCACGTGA 1140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1223 CCAGATCTCGAGGGAGATTGGTGGTGTTTGCATTGCTCAGTCACAGAAAATCCCACGTGA 1282

Qy       1141 ACCAAGACCTGGAGAATTTGAAAAAATTATCAAACGCCTGCTAGAAACACCTAATGCTCG 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1283 ACCAAGACCTGGAGAATTTGAAAAAATTATCAAACGCCTGCTAGAAACACCTAATGCTCG 1342

Qy       1201 AGCAGTGATTATGTTTGCCAATGAGGATGACATCAGGAGGATATTGGAAGCAGCAAAAAA 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1343 AGCAGTGATTATGTTTGCCAATGAGGATGACATCAGGAGGATATTGGAAGCAGCAAAAAA 1402

Qy       1261 ACTAAACCAAAGTGGGCATTTTCTCTGGATTGGCTCAGATAGTTGGGGATCCAAAATAGC 1320
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1403 ACTAAACCAAAGTGGGCATTTTCTCTGGATTGGCTCAGATAGTTGGGGATCCAAAATAGC 1462

Qy       1321 ACCTGTCTATCAGCAAGAGGAGATTGCAGAAGGGGCTGTGACAATTTTGCCCAAACGAGC 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1463 ACCTGTCTATCAGCAAGAGGAGATTGCAGAAGGGGCTGTGACAATTTTGCCCAAACGAGC 1522

Qy       1381 ATCAATTGATGGATTTGATCGATACTTTAGAAGCCGAACTCTTGCCAATAATCGAAGAAA 1440
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1523 ATCAATTGATGGATTTGATCGATACTTTAGAAGCCGAACTCTTGCCAATAATCGAAGAAA 1582

Qy       1441 TGTGTGGTTTGCAGAATTCTGGGAGGAGAATTTTGGCTGCAAGTTAGGATCACATGGGAA 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1583 TGTGTGGTTTGCAGAATTCTGGGAGGAGAATTTTGGCTGCAAGTTAGGATCACATGGGAA 1642

Qy       1501 AAGGAACAGTCATATAAAGAAATGCACAGGGCTGGAGCGAATTGCTCGGGATTCATCTTA 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1643 AAGGAACAGTCATATAAAGAAATGCACAGGGCTGGAGCGAATTGCTCGGGATTCATCTTA 1702
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Qy       1561 TGAACAGGAAGGAAAGGTCCAATTTGTAATTGATGCTGTATATTCCATGGCTTACGCCCT 1620
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1703 TGAACAGGAAGGAAAGGTCCAATTTGTAATTGATGCTGTATATTCCATGGCTTACGCCCT 1762

Qy       1621 GCACAATATGCACAAAGATCTCTGCCCTGGATACATTGGCCTTTGTCCACGAATGAGTAC 1680
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1763 GCACAATATGCACAAAGATCTCTGCCCTGGATACATTGGCCTTTGTCCACGAATGAGTAC 1822

Qy       1681 CATTGATGGGAAAGAGCTACTTGGTTATATTCGGGCTGTAAATTTTAATGGTTGCCGAAG 1740
             ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1823 CATTGATGGGAAAGAGCTACTTGGTTATATTCGGGCTGTAAATTTTAAT---------- 1871

Qy       1741 AGGGATCCAGATGTCTCTACCCTGGCCAACTCTTTTTACTCCTTCATTTTCCAGTAGTTG 1800

Db       1872 ------------------------------------------------------------ 1871

Qy       1801 GGCAGTGCTGGCACTCCTGTCACTTTTAATGAAAACGGAGATGCTCCTGGACGTTATGAT 1860
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1872 GGCAGTGCTGGCACTCCTGTCACTTTTAATGAAAACGGAGATGCTCCTGGACGTTATGAT 1931

Qy       1861 ATCTTCCAGTATCAAATAACCAACAAAAGCACAGAGTACAAAGTCATCGGCCACTGGACC 1920
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1932 ATCTTCCAGTATCAAATAACCAACAAAAGCACAGAGTACAAAGTCATCGGCCACTGGACC 1991

Qy       1921 AATCAGCTTCATCTAAAAGTGGAAGACATGCAGTGGGCTCATAGAGAACATACTCACCCG 1980
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1992 AATCAGCTTCATCTAAAAGTGGAAGACATGCAGTGGGCTCATAGAGAACATACTCACCCG 2051

Qy       1981 GCGTCTGTCTGCAGCCTGCCGTGTAAGCCAGGGGAGAGGAAGAAAACGGTGAAAGGGGTC 2040
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2052 GCGTCTGTCTGCAGCCTGCCGTGTAAGCCAGGGGAGAGGAAGAAAACGGTGAAAGGGGTC 2111

Qy       2041 CCTTGCTGCTGGCACTGTGAACGCTGTGAAGGTTACAACTACCAGGTGGATGAGCTGTCC 2100
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2112 CCTTGCTGCTGGCACTGTGAACGCTGTGAAGGTTACAACTACCAGGTGGATGAGCTGTCC 2171

Qy       2101 TGTGAACTTTGCCCTCTGGATCAGAGACCCAACATGAACCGCACAGGCTGCCAGCTTATC 2160
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2172 TGTGAACTTTGCCCTCTGGATCAGAGACCCAACATGAACCGCACAGGCTGCCAGCTTATC 2231

Qy       2161 CCCATCATCAAATTGGAGTGGCATTCTCCCTGGGCTGTGGTGCCTGTGTTTGTTGCAATA 2220
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2232 CCCATCATCAAATTGGAGTGGCATTCTCCCTGGGCTGTGGTGCCTGTGTTTGTTGCAATA 2291

Qy       2221 TTGGGAATCATCGCCACCACCTTTGTGATCGTGACCTTTGTCCGCTATAATGACACACCT 2280
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2292 TTGGGAATCATCGCCACCACCTTTGTGATCGTGACCTTTGTCCGCTATAATGACACACCT 2351

Qy       2281 ATCGTGAGGGCTTCAGGACGCGAACTTAGTTACGTGCTCCTAACGGGGATTTTTCTCTGT 2340
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2352 ATCGTGAGGGCTTCAGGACGCGAACTTAGTTACGTGCTCCTAACGGGGATTTTTCTCTGT 2411

Qy       2341 TATTCAATCACGTTTTTAATGATTGCAGCACCAGATACAATCATATGCTCCTTCCGACGG 2400
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2412 TATTCAATCACGTTTTTAATGATTGCAGCACCAGATACAATCATATGCTCCTTCCGACGG 2471

Qy       2401 GTCTTCCTAGGACTTGGCATGTGTTTCAGCTATGCAGCCCTTCTGACCAAAACAAACCGT 2460
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2472 GTCTTCCTAGGACTTGGCATGTGTTTCAGCTATGCAGCCCTTCTGACCAAAACAAACCGT 2531

Qy       2461 ATCCACCGAATATTTGAGCAGGGGAAGAAATCTGTCACAGCGCCCAAGTTCATTAGTCCA 2520
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2532 ATCCACCGAATATTTGAGCAGGGGAAGAAATCTGTCACAGCGCCCAAGTTCATTAGTCCA 2591

Qy       2521 GCATCTCAGCTGGTGATCACCTTCAGCCTCATCTCCGTCCAGCTCCTTGGAGTGTTTGTC 2580
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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2592 GCATCTCAGCTGGTGATCACCTTCAGCCTCATCTCCGTCCAGCTCCTTGGAGTGTTTGTC 2651

Qy       2581 TGGTTTGTTGTGGATCCCCCCCCACATCATCATTGACTATGGAGAGCAGCGGACACTAGAT 2640
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2652 TGGTTTGTTGTGGATCCCCCCCCACATCATCATTGACTATGGAGAGCAGCGGACACTAGAT 2711

Qy       2641 CCAGAGAAGGCCAGGGGAGTGCTCAAGTGTGACATTTCTGATCTCTCACTCATTTGTTCA 2700
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2712 CCAGAGAAGGCCAGGGGAGTGCTCAAGTGTGACATTTCTGATCTCTCACTCATTTGTTCA 2771

Qy       2701 CTTGGATACAGTATCCTCTTGATGGTCACTTGTACTGTTTATGCCATTAAAACGAGAGGT 2760
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2772 CTTGGATACAGTATCCTCTTGATGGTCACTTGTACTGTTTATGCCATTAAAACGAGAGGT 2831

Qy       2761 GTCCCAGAGACTTTCAATGAAGCCAAACCTATTGGATTTACCATGTATACCACCTGCATC 2820
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2832 GTCCCAGAGACTTTCAATGAAGCCAAACCTATTGGATTTACCATGTATACCACCTGCATC 2891

Qy       2821 ATTTGGTTAGCTTTCATCCCCATCTTTTTTGGTACAGCCCAGTCAGCAGAAAAGATGTAC 2880
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2892 ATTTGGTTAGCTTTCATCCCCATCTTTTTTGGTACAGCCCAGTCAGCAGAAAAGATGTAC 2951

Qy       2881 ATCCAGACAACAACACTTACTGTCTCCATGAGTTTAAGTGCTTCAGTATCTCTGGGCATG 2940
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2952 ATCCAGACAACAACACTTACTGTCTCCATGAGTTTAAGTGCTTCAGTATCTCTGGGCATG 3011

Qy       2941 CTCTATATGCCCAAGGTTTATATTATAATTTTTCATCCAGAACAGAATGTTCAAAAACGC 3000
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3012 CTCTATATGCCCAAGGTTTATATTATAATTTTTCATCCAGAACAGAATGTTCAAAAACGC 3071

Qy       3001 AAGAGGAGCTTCAAGGCTGTGGTGACAGCTGCCACCATGCAAAGCAAACTGATCCAAAAA 3060
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3072 AAGAGGAGCTTCAAGGCTGTGGTGACAGCTGCCACCATGCAAAGCAAACTGATCCAAAAA 3131

Qy       3061 GGAAATGACAGACCAAATGGCGAGGTGAAAAGTGAACTCTGTGAGAGTCTTGAAACCAAC 3120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3132 GGAAATGACAGACCAAATGGCGAGGTGAAAAGTGAACTCTGTGAGAGTCTTGAAACCAAC 3191

Qy       3121 A----------------------------------------------------------CTTC 3125
                |                                                          ||||
Db       3192 AGTAAGTCATCTGTAGAGTTTCCGATGGTCAAGAGCGGGAGCACTTCCTAATAGATCTTC 3251

Qy       3126 CTCTACCAAGACAACATATATCAGTTACAGCAATCATTCAATCTGAAACAGGGAAATGGC 3185
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3252 CTCTACCAAGACAACATATATCAGTTACAGCAATCATTCAATCTGAAACAGGGAAATGGC 3311

Qy       3186 ACAATCTGAAGAGATGTGGTATATGATCTTAAATGATGAACATGAGACCGCAAAAATTCA 3245
                |||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db       3312 ACAATCTGAAGAGACGTGGTATATGATCTTAAATGATGAACATGAGACCGCAAAAATTCA 3371

Qy       3246 CTCCTGGAGATCTCCGTAGACTACAATCAATCAAATCAATAGTCAGTCTTGTAAGGAACA 3305
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3372 CTCCTGGAGATCTCCGTAGACTACAATCAATCAAATCAATAGTCAGTCTTGTAAGGAACA 3431

Qy       3306 AAAATTAGCCATGAGCCAAAAGTATCAATAAACGGGGAGTGAAGAAACCCGTTTTATACA 3365
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3432 AAAATTAGCCATGAGCCAAAAGTATCAATAAACGGGGAGTGAAGAAACCCGTTTTATACA 3491

Qy       3366 ATAAAACCAATGAGTGTCAAGCTAAAGTATTGCTTATTCATGAGCAGTTAAAACAAATCA 3425
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3492 ATAAAACCAATGAGTGTCAAGCTAAAGTATTGCTTATTCATGAGCAGTTAAAACAAATCA 3551

Qy       3426 CAAAAGGAAAACTAATGTTAGCTCGTGAAAAAAAATGCTGTTGAAATAAATAATGTCTGA 3485
                |||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||
Db       3552 CAAAAGGAAAACTAATGTTAGCTCGTG-AAAAAAATGCTGTTGAAATAAATAATGTCTGA 3610
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Qy       3486 TGTTATTCTTGTATTTTTCTGTGATTGTGAGAACTCCCGTTCCTGTCCCACATTGTTTAA 3545
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3611 TGTTATTCTTGTATTTTTCTGTGATTGTGAGAACTCCCGTTCCTGTCCCACATTGTTTAA 3670

Qy       3546 CTTGTATAAGACAATGAGTCTGTTTCTTGTAATGGCTGACCAGATTGAAGCCCTGGGTTG 3605
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3671 CTTGTATAAGACAATGAGTCTGTTTCTTGTAATGGCTGACCAGATTGAAGCCCTGGGTTG 3730

Qy       3606 TGCTAAAAATAAATGCAATGATTGATGCATGCAATTTTTTATACAAATAATTTATTTCTA 3665
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3731 TGCTAAAAATAAATGCAATGATTGATGCATGCAATTTTTTATACAAATAATTTATTTCTA 3790


Qy       3666 ATAATAAAGG 3675
             ||||||||||
Db       3791 ATAATAAAGG 3800
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Claims 1-6, 8-10, 16, and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Drmanac et al (WO 01/75067 A2 (October 11, 2001)). Drmanac et al discloses a nucleic acid (SEQ ID NO: 29442) that shares 3351 nucleotides with SEQ ID NO: 9 of the instant claims (see the alignment below). Thus, the nucleic acids of Drmanac et al would hybridize to SEQ ID NO: 9 of the instant claims. Kennell (Progr. Nucl. Acid Res. Mol. Biol. 11: 259 (1971) paragraph bridging pages 260-261) teaches that a heteroduplex of 25-50 base pairs approaches maximal stability, thus, the nucleic acids of Drmanac et al are embraced by the claims. In addition, Drmanac et al teaches the use of vectors and host cells to produce a polypeptide encoded by the nucleic acid (*e.g.*, see page 19, line 7 through page 20, line 24), the use of polynucleotide vaccines (*e.g.*, page 20, lines 17-24), and the inclusion of polynucleotides in kits (*e.g.*, page 87, line 20 through page 89, line 5).

Alignment of Drmanac et al SEQ ID NO: 29442 with SEQ ID NO: 9

```
RESULT 3
AAS93638
ID   AAS93638 standard; cDNA; 3940 BP.
XX
AC   AAS93638;
XX
DT   13-FEB-2002  (first entry)
XX
DE   DNA encoding novel human diagnostic protein #29442.
XX
```

KW Human; chromosome mapping; gene mapping; gene therapy; forensic;
KW food supplement; medical imaging; diagnostic; genetic disorder; ss.
XX
OS Homo sapiens.
XX
PN WO200175067-A2.
XX
PD 11-OCT-2001.
XX
PF 30-MAR-2001; 2001WO-US008631.
XX
PR 31-MAR-2000; 2000US-00540217.
PR 23-AUG-2000; 2000US-00649167.
XX
PA (HYSE-) HYSEQ INC.
XX
PI Drmanac RT, Liu C, Tang YT;
XX
DR WPI; 2001-639362/73.
DR P-PSDB; ABG29451.
XX
PT New isolated polynucleotide and encoded polypeptides, useful in
PT diagnostics, forensics, gene mapping, identification of mutations
PT responsible for genetic disorders or other traits and to assess
PT biodiversity.
XX
PS Claim 1; SEQ ID NO 29442; 103pp; English.
XX
CC The invention relates to isolated polynucleotide (I) and polypeptide (II)
CC sequences. (I) is useful as hybridisation probes, polymerase chain
CC reaction (PCR) primers, oligomers, and for chromosome and gene mapping,
CC and in recombinant production of (II). The polynucleotides are also used
CC in diagnostics as expressed sequence tags for identifying expressed
CC genes. (I) is useful in gene therapy techniques to restore normal
CC activity of (II) or to treat disease states involving (II). (II) is
CC useful for generating antibodies against it, detecting or quantitating a
CC polypeptide in tissue, as molecular weight markers and as a food
CC supplement. (II) and its binding partners are useful in medical imaging
CC of sites expressing (II). (I) and (II) are useful for treating disorders
CC involving aberrant protein expression or biological activity. The
CC polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic
CC coding sequences of the invention. Note: The sequence data for this
CC patent did not appear in the printed specification, but was obtained in
CC electronic format directly from WIPO at
CC ftp.wipo.int/pub/published_pct_sequences
XX
SQ Sequence 3940 BP; 1071 A; 921 C; 952 G; 996 T; 0 U; 0 Other;

Query Match 89.2%; Score 3331; DB 5; Length 3940;
Best Local Similarity 99.5%; Pred. No. 0;
Matches 3351; Conservative 0; Mismatches 15; Indels 1; Gaps 1;

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Qy        309 GCCCTTTCTGCTGTGTTGCAAGAATAAACTTTGGGTCTTGGATTGCAATACCACCTGTGG 368
              ||   ||| |   ||   |  ||||||||||||||||||||||||||||||||||||
Db        566 GCGGCTTCCGGGATGAGTCGGGAATAAACTTTGGGTCTTGGATTGCAATACCACCTGTGG 625

Qy        369 AGAAAATGGTATGCGAGGGAAAGCGATCAGCCTCTTGCCCTTGTTTCTTCCTCTTGACCG 428
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        626 AGAAAATGGTATGCGAGGGAAAGCGATCAGCCTCTTGCCCTTGTTTCTTCCTCTTGACCG 685

Qy        429 CCAAGTTCTACTGGATCCTCACAATGATGCAAAGAACTCACAGCCAGGAGTATGCCCATT 488
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        686 CCAAGTTCTACTGGATCCTCACAATGATGCAAAGAACTCACAGCCAGGAGTATGCCCATT 745
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Qy        489 CCATACGGGTGGATGGGGACATTATTTTGGGGGGTCTCTTCCCTGTCCACGCAAAGGGAG 548
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        746 CCATACGGGTGGATGGGGACATTATTTTGGGGGGTCTCTTCCCTGTCCACGCAAAGGGAG 805

Qy        549 AGAGAGGGGTGCCTTGTGGGGAGCTGAAGAAGGAAAAGGGGATTCACAGACTGGAGGCCA 608
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        806 AGAGAGGGGTGCCTTGTGGGGAGCTGAAGAAGGAAAAGGGGATTCACAGACTGGAGGCCA 865

Qy        609 TGCTTTATGCAATTGACCAGATTAACAAGGACCCTGATCTCCTTTCCAACATCACTCTGG 668
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        866 TGCTTTATGCAATTGACCAGATTAACAAGGACCCTGATCTCCTTTCCAACATCACTCTGG 925


Qy        669 GTGTCCGCATCCTCGACACGTGCTCTAGGGACACCTATGCTTTGGAGCAGTCTCTAACAT 728
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        926 GTGTCCGCATCCTCGACACGTGCTCTAGGGACACCTATGCTTTGGAGCAGTCTCTAACAT 985

Qy        729 TCGTGCAGGCATTAATAGAGAAAGATGCTTCGGATGTGAAGTGTGCTAATGGAGATCCAC 788
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        986 TCGTGCAGGCATTAATAGAGAAAGATGCTTCGGATGTGAAGTGTGCTAATGGAGATCCAC 1045

Qy        789 CCATTTTCACCAAGCCCGACAAGATTTCTGGCGTCATAGGTGCTGCAGCAAGCTCCGTGT 848
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1046 CCATTTTCACCAAGCCCGACAAGATTTCTGGCGTCATAGGTGCTGCAGCAAGCTCCGTGT 1105

Qy        849 CCATCATGGTTGCTAACATTTTAAGACTTTTTAAGATACCTCAAATCAGCTATGCATCCA 908
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1106 CCATCATGGTTGCTAACATTTTAAGACTTTTTAAGATACCTCAAATCAGCTATGCATCCA 1165

Qy        909 CAGCCCCAGAGCTAAGTGATAACACCAGGTATGACTTTTTCTCTCGAGTGGTTCCGCCTG 968
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1166 CAGCCCCAGAGCTAAGTGATAACACCAGGTATGACTTTTTCTCTCGAGTGGTTCCGCCTG 1225

Qy        969 ACTCCTACCAAGCCCAAGCCATGGTGGACATCGTGACAGCACTGGGATGGAATTATGTTT 1028
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1226 ACTCCTACCAAGCCCAAGCCATGGTGGACATCGTGACAGCACTGGGATGGAATTATGTTT 1285

Qy       1029 CGACACTGGCTTCTGAGGGGAACTATGGTGAGAGCGGTGTGGAGGCCTTCACCCAGATCT 1088
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1286 CGACACTGGCTTCTGAGGGGAACTATGGTGAGAGCGGTGTGGAGGCCTTCACCCAGATCT 1345

Qy       1089 CGAGGGAGATTGGTGGTGTTTGCATTGCTCAGTCACAGAAAATCCCACGTGAACCAAGAC 1148
              |||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||
Db       1346 CGAGGGAGATTGGTGGTGTTTGCATTGCCCAGTCACAGAAAATCCCACGTGAACCAAGAC 1405

Qy       1149 CTGGAGAATTTGAAAAAATTATCAAACGCCTGCTAGAAACACCTAATGCTCGAGCAGTGA 1208
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1406 CTGGAGAATTTGAAAAAATTATCAAACGCCTGCTAGAAACACCTAATGCTCGAGCAGTGA 1465

Qy       1209 TTATGTTTGCCAATGAGGATGACATCAGGAGGATATTGGAAGCAGCAAAAAAACTAAACC 1268
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1466 TTATGTTTGCCAATGAGGATGACATCAGGAGGATATTGGAAGCAGCAAAAAAACTAAACC 1525

Qy       1269 AAAGTGGGCATTTTCTCTGGATTGGCTCAGATAGTTGGGGATCCAAAATAGCACCTGTCT 1328
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1526 AAAGTGGGCATTTTCTCTGGATTGGCTCAGATAGTTGGGGATCCAAAATAGCACCTGTCT 1585

Qy       1329 ATCAGCAAGAGGAGATTGCAGAAGGGGCTGTGACAATTTTGCCCAAACGAGCATCAATTG 1388
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1586 ATCAGCAAGAGGAGATTGCAGAAGGGGCTGTGACAATTTTGCCCAAACGAGCATCAATTG 1645

Qy       1389 ATGGATTTGATCGATACTTTAGAAGCCGAACTCTTGCCAATAATCGAAGAAATGTGTGGT 1448
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1646 ATGGATTTGATCGATACTTTAGAAGCCGAACTCTTGCCAATAATCGAAGAAATGTGTGGT 1705

Qy       1449 TTGCAGAATTCTGGGAGGAGAATTTTGGCTGCAAGTTAGGATCACATGGGAAAAGGAACA 1508
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1706 TTGCAGAATTCTGGGAGGAGAATTTTGGCTGCAAGTTAGGATCACATGGGAAAAGGAACA 1765
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Qy       1509 GTCATATAAAGAAATGCACAGGGCTGGAGCGAATTGCTCGGGATTCATCTTATGAACAGG 1568
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1766 GTCATATAAAGAAATGCACAGGGCTGGAGCGAATTGCTCGGGATTCATCTTATGAACAGG 1825

Qy       1569 AAGGAAAGGTCCAATTTGTAATTGATGCTGTATATTCCATGGCTTACGCCCTGCACAATA 1628
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1826 AAGGAAAGGTCCAATTTGTAATTGATGCTGTATATTCCATGGCTTACGCCCTGCACAATA 1885


Qy       1629 TGCACAAAGATCTCTGCCCTGGATACATTGGCCTTTGTCCACGAATGAGTACCATTGATG 1688
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1886 TGCACAAAGATCTCTGCCCTGGATACATTGGCCTTTGTCCACGAATGAGTACCATTGATG 1945

Qy       1689 GGAAAGAGCTACTTGGTTATATTCGGGCTGTAAATTTTAATGGTTGCCGAAGAGGGATCC 1748
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1946 GGAAAGAGCTACTTGGTTATATTCGGGCTGTAAATTTTAATGGTTGCCGAAGAGGGATCC 2005

Qy       1749 AGATGTCTCTACCCTGGCCAACTCTTTTTACTCCTTCATTTTCCAGTAGTTGGGCAGTGC 1808
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2006 AGATGTCTCTACCCTGGCCAACTCTTTTTACTCCTTCATTTTCCAGTAGTTGGGCAGTGC 2065

Qy       1809 TGGCACTCCTGTCACTTTTAATGAAAACGGAGATGCTCCTGGACGTTATGATATCTTCCA 1868
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2066 TGGCACTCCTGTCACTTTTAATGAAAACGGAGATGCTCCTGGACGTTATGATATCTTCCA 2125

Qy       1869 GTATCAAATAACCAACAAAAGCACAGAGTACAAAGTCATCGGCCACTGGACCAATCAGCT 1928
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2126 GTATCAAATAACCAACAAAAGCACAGAGTACAAAGTCATCGGCCACTGGACCAATCAGCT 2185

Qy       1929 TCATCTAAAAGTGGAAGACATGCAGTGGGCTCATAGAGAACATACTCACCCGGCGTCTGT 1988
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2186 TCATCTAAAAGTGGAAGACATGCAGTGGGCTCATAGAGAACATACTCACCCGGCGTCTGT 2245

Qy       1989 CTGCAGCCTGCCGTGTAAGCCAGGGGAGAGGAAGAAAACGGTGAAAGGGGTCCCTTGCTG 2048
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2246 CTGCAGCCTGCCGTGTAAGCCAGGGGAGAGGAAGAAAACGGTGAAAGGGGTCCCTTGCTG 2305

Qy       2049 CTGGCACTGTGAACGCTGTGAAGGTTACAACTACCAGGTGGATGAGCTGTCCTGTGAACT 2108
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2306 CTGGCACTGTGAACGCTGTGAAGGTTACAACTACCAGGTGGATGAGCTGTCCTGTGAACT 2365

Qy       2109 TTGCCCTCTGGATCAGAGACCCAACATGAACCGCACAGGCTGCCAGCTTATCCCCATCAT 2168
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2366 TTGCCCTCTGGATCAGAGACCCAACATGAACCGCACAGGCTGCCAGCTTATCCCCATCAT 2425

Qy       2169 CAAATTGGAGTGGCATTCTCCCTGGGCTGTGGTGCCTGTGTTTGTTGCAATATTGGGAAT 2228
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2426 CAAATTGGAGTGGCATTCTCCCTGGGCTGTGGTGCCTGTGTTTGTTGCAATATTGGGAAT 2485

Qy       2229 CATCGCCACCACCTTTGTGATCGTGACCTTTGTCCGCTATAATGACACACCTATCGTGAG 2288
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2486 CATCGCCACCACCTTTGTGATCGTGACCTTTGTCCGCTATAATGACACACCTATCGTGAG 2545

Qy       2289 GGCTTCAGGACGCGAACTTAGTTACGTGCTCCTAACGGGGATTTTTCTCTGTTATTCAAT 2348
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2546 GGCTTCAGGACGCGAACTTAGTTACGTGCTCCTAACGGGGATTTTTCTCTGTTATTCAAT 2605

Qy       2349 CACGTTTTTAATGATTGCAGCACCAGATACAATCATATGCTCCTTCCGACGGGTCTTCCT 2408
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2606 CACGTTTTTAATGATTGCAGCACCAGATACAATCATATGCTCCTTCCGACGGGTCTTCCT 2665

Qy       2409 AGGACTTGGCATGTGTTTCAGCTATGCAGCCCTTCTGACCAAAACAAACCGTATCCACCG 2468
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2666 AGGACTTGGCATGTGTTTCAGCTATGCAGCCCTTCTGACCAAAACAAACCGTATCCACCG 2725

Qy       2469 AATATTTGAGCAGGGGAAGAAATCTGTCACAGCGCCCAAGTTCATTAGTCCAGCATCTCA 2528
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db       2726 AATATTTGAGCAGGGGAAGAAATCTGTCACAGCGCCCAAGTTCATTAGTCCAGCATCTCA 2785

Qy       2529 GCTGGTGATCACCTTCAGCCTCATCTCCGTCCAGCTCCTTGGAGTGTTTGTCTGGTTTGT 2588
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2786 GCTGGTGATCACCTTCAGCCTCATCTCCGTCCAGCTCCTTGGAGTGTTTGTCTGGTTTGT 2845


Qy       2589 TGTGGATCCCCCCCCACATCATCATTGACTATGGAGAGCAGCGGACACTAGATCCAGAGAA 2648
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2846 TGTGGATCCCCCCCCACATCATCATTGACTATGGAGAGCAGCGGACACTAGATCCAGAGAA 2905

Qy       2649 GGCCAGGGGAGTGCTCAAGTGTGACATTTCTGATCTCTCACTCATTTGTTCACTTGGATA 2708
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2906 GGCCAGGGGAGTGCTCAAGTGTGACATTTCTGATCTCTCACTCATTTGTTCACTTGGATA 2965

Qy       2709 CAGTATCCTCTTGATGGTCACTTGTACTGTTTATGCCATTAAAACGAGAGGTGTCCCAGA 2768
              |||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||
Db       2966 CAGTATCCTCTTGATGGTCACTTGTACTGTTTATGCCAATAAAACGAGAGGTGTCCCAGA 3025

Qy       2769 GACTTTCAATGAAGCCAAACCTATTGGATTTACCATGTATACCACCTGCATCATTTGGTT 2828
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3026 GACTTTCAATGAAGCCAAACCTATTGGATTTACCATGTATACCACCTGCATCATTTGGTT 3085

Qy       2829 AGCTTTCATCCCCATCTTTTTTGGTACAGCCCAGTCAGCAGAAAAGATGTACATCCAGAC 2888
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3086 AGCTTTCATCCCCATCTTTTTTGGTACAGCCCAGTCAGCAGAAAAGATGTACATCCAGAC 3145

Qy       2889 AACAACACTTACTGTCTCCATGAGTTTAAGTGCTTCAGTATCTCTGGGCATGCTCTATAT 2948
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3146 AACAACACTTACTGTCTCCATGAGTTTAAGTGCTTCAGTATCTCTGGGCATGCTCTATAT 3205

Qy       2949 GCCCAAGGTTTATATTATAATTTTTCATCCAGAACAGAATGTTCAAAAACGCAAGAGGAG 3008
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3206 GCCCAAGGTTTATATTATAATTTTTCATCCAGAACAGAATGTTCAAAAACGCAAGAGGAG 3265

Qy       3009 CTTCAAGGCTGTGGTGACAGCTGCCACCATGCAAAGCAAACTGATCCAAAAAGGAAATGA 3068
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3266 CTTCAAGGCTGTGGTGACAGCTGCCACCATGCAAAGCAAACTGATCCAAAAAGGAAATGA 3325

Qy       3069 CAGACCAAATGGCGAGGTGAAAAGTGAACTCTGTGAGAGTCTTGAAACCAACACTTCCTC 3128
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3326 CAGACCAAATGGCGAGGTGAAAAGTGAACTCTGTGAGAGTCTTGAAACCAACACTTCCTC 3385

Qy       3129 TACCAAGACAACATATATCAGTTACAGCAATCATTCAATCTGAAACAGGGAAATGGCACA 3188
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3386 TACCAAGACAACATATATCAGTTACAGCAATCATTCAATCTGAAACAGGGAAATGGCACA 3445

Qy       3189 ATCTGAAGAGATGTGGTATATGATCTTAAATGATGAACATGAGACCGCAAAAATTCACTC 3248
              |||||||||||  ||||||||||||||||||||||||||||||||||||||||||||||||
Db       3446 ATCTGAAGAGACGTGGTATATGATCTTAAATGATGAACATGAGACCGCAAAAATTCACTC 3505

Qy       3249 CTGGAGATCTCCGTAGACTACAATCAATCAAATCAATAGTCAGTCTTGTAAGGAACAAAA 3308
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3506 CTGGAGATCTCCGTAGACTACAATCAATCAAATCAATAGTCAGTCTTGTAAGGAACAAAA 3565

Qy       3309 ATTAGCCATGAGCCAAAAGTATCAATAAACGGGGAGTGAAGAAACCCGTTTTATACAATA 3368
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       3566 ATTAGCCATGAGCCAAAAGTATCAATAAACGGGGAGTGAAGAAACCCGTTTTATACAATA 3625

Qy       3369 AAACCAATGAGTGTCAAGCTAAAGTATTGCTTATTCATGAGCAGTTAAAACAAATCACAA 3428
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Qy       3489 TATTCTTGTATTTTTCTGTGATTGTGAGAACTCCCGTTCCTGTCCCACATTGTTTAACTT 3548
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Qy       3609 TAAAAATAAATGCAATGATTGATGCATGCAATTTTTTATACAAATAATTTATTTCTAATA 3668
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy       3669 ATAAAGG 3675
             |||||||
Db       3925 ATAAAGG 3931
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Martinell whose telephone number is (571) 272-0719.

The examiner works a flexible schedule and can be reached by phone and voice mail. Alternatively, a request for a return telephone call may be e-mailed to james.martinell@uspto.gov. Since e-mail communications may not be secure, it is suggested that information in such requests be limited to name, phone number, and the best time to return the call.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571) 272-0735.

**OFFICIAL FAX NUMBER**

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any Official Communication to the USPTO should be faxed to this number.

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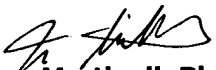

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**Primary Examiner**
**Art Unit 1634**

1/4/08